



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/682,721	10/10/2001	George Mathew	15-XZ-6153	3643

27256 7590 02/11/2004

ARTZ & ARTZ, P.C.
28333 TELEGRAPH RD.
SUITE 250
SOUTHFIELD, MI 48034

EXAMINER

PEREZ DAPLE, AARON C

ART UNIT	PAPER NUMBER
----------	--------------

2121

2

DATE MAILED: 02/11/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/682,721

Applicant(s)

MATHEW ET AL.

Examiner

Aaron Perez-Daple

Art Unit

2121

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 October 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. This Action is in response to Application filed 10/10/01, which has been fully considered.
2. Claims 1-20 are presented for examination.

Claim Objections

3. **Claim 11** is objected to because line 2 recites "of one or more" where it should recite -- one or more--. Appropriate correction is required.
4. **Claim 20** is objected to because it is not numbered. Appropriate correction is required.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. **Claims 1-7** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, the term "referring to" in line 8 of claim 1 renders the claims indefinite. It is not clear in what element(s) are "referring to" the state table nor how the state table is used by the element(s). It is further not clear if "referring to" includes merely using information derived from the state table (i.e. rather than using the state table itself). For the purpose of applying prior art, the Examiner interprets that "referring to" may include using information derived from the state table.
7. As dependent claims, claims 2-7 suffer from the same deficiencies as claim 1.
8. **Claims 7 and 19** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant

Art Unit: 2121

regards as the invention. As for claim 7, it is not clear how a state model can be “annotated” with “actions and conditions.” With respect to claims 7 and 19, it seems that Applicant may be using the term “annotating” to mean something other than the accepted meaning within the art. Where applicant acts as his or her own lexicographer to specifically define a term of a claim contrary to its ordinary meaning, the written description must clearly redefine the claim term and set forth the uncommon definition so as to put one reasonably skilled in the art on notice that the applicant intended to so redefine that claim term. *Process Control Corp. v. HydReclaim Corp.*, 190 F.3d 1350, 1357, 52 USPQ2d 1029, 1033 (Fed. Cir. 1999). The accepted meaning of “annotating” is “providing extra information (usually in the form of comments or notes) associated with a particular point in a document or program” (see cited FOLDLOC definition). Furthermore, this information is usually not essential to the correct function of the program. The term “annotating” in the present application is indefinite because the specification does not clearly redefine the term. It is further not clear how to interpret the limitations “actions and conditions” in claim 7 in view of the accepted meaning of “annotating” (e.g. how can comments or notes comprise actions and conditions?). The Examiner interprets the term “annotating” as having the standard meaning.

9. **Claims 16-19** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically, it is not clear how to interpret the limitation a “runtime library” in view of the claimed limitations and the specification. It seems that Applicant may be using the term “runtime library” to mean something other than the accepted meaning within the art. Where applicant acts as his or her own lexicographer to specifically define a

term of a claim contrary to its ordinary meaning, the written description must clearly redefine the claim term and set forth the uncommon definition so as to put one reasonably skilled in the art on notice that the applicant intended to so redefine that claim term. *Process Control Corp. v. HydReclaim Corp.*, 190 F.3d 1350, 1357, 52 USPQ2d 1029, 1033 (Fed. Cir. 1999). The accepted meaning of “library” is “a collection of subroutines and functions stored in one or more files, usually in compiled form, for linking with other programs” (see cited FOLDOC definition). Under this interpretation, it is unclear to the Examiner how the “runtime library” is able to perform functions including the claimed “implementing,” “processing,” “handling” and “annotating” steps of claims 17, 18 and 19, especially given that the code within the library, apparently, has not been compiled (see Fig. 2). For the purpose of applying prior art, the Examiner finds that any stored files or code which are used to facilitate the claimed steps (e.g. “implementing,” “processing,” “handling” and “annotating”) meet the claimed limitations.

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

11. **Claims 1-6, 8, 11-15 and 20** are rejected under 35 U.S.C. 102(a) as being anticipated by Russell (US 6,212,625 B1) (hereinafter Russell).
12. As for claim 1, Russell teaches a method for implementing a pre-designed state model, said method comprising:

extracting state information from the state model [col. 2, lines 40-48, “One traditional approach...finite state machine.”];

processing said extracted state information [col. 2, lines 40-48, “One traditional approach...finite state machine.”];

generating a state code and a state table in response to said processed extracted state information [col. 2, lines 40-48, “One traditional approach...finite state machine.”];

compiling said state code to generate a runtime code; and

implementing the state model by running said runtime code while referring to said state table [inherent, state machine will not function without runtime code; col. 2, lines 40-48, “One traditional approach...finite state machine.”].

13. As for claim 2, Russell discloses the method of claim 1 wherein extracting state information from the state model comprises determining what events exist in the state model [col. 2, lines 5-24, “A state machine is...the input conditions.”].

14. As for claim 3, Russell discloses a method the method of claim 1 wherein extracting state information from the state model comprises determining what transitions exist between states within the state model [col. 2, lines 5-24, “A state machine is...the input conditions.”].

15. As for claim 4, Russell discloses the method of claim 1 further comprising:

generating an events symbols header in response to a header file [col. 5, lines 37-59, “The storage unit...entry table 510.”]; and

generating said state code in response to said processed extracted state information of said events symbols header [col. 5, lines 37-59, “The storage unit...entry table 510.”].

16. As for claim 5, Russell discloses the method of claim 4 wherein compiling said state code comprises compiling said state code in response to said events symbols header [compiling step is inherent; col. 5, lines 37-59, "The storage unit...entry table 510."].
17. As for claim 6, Russell discloses the method of claim 1 further comprising:
 - generating a events symbols header in response to an events configuration file [col. 5, lines 37-59, "The storage unit...entry table 510."];
 - and generating said state code in response to said processed extracted state information and said events symbols header [col. 5, lines 37-59, "The storage unit...entry table 510."].
18. As for claim 8, Russell teaches a method for implementing a pre-designed plurality of state models for a state machine having an event configuration file, said method comprising:
 - extracting state information from the plurality of state models [col. 2, lines 40-48, "One traditional approach...finite state machine."; col. 5, lines 6-25, "Referring to Fig. 2...finite state machines."];
 - generating an events symbols header from the event configuration file [col. 5, lines 37-59, "The storage unit...entry table 510."];
 - processing said extracted state information in response to said events symbols header [col. 5, lines 37-59, "The storage unit...entry table 510."];
 - generating a plurality of state codes and a plurality of state tables in response to said processed extracted state information [col. 2, lines 40-48, "One traditional approach...finite state machine."; col. 5, lines 6-25, "Referring to Fig. 2...finite state machines."];
 - compiling said plurality of state codes using said events symbols header to generate a plurality of runtime codes [col. 5, lines 37-59, "The storage unit...entry table 510."]; and

implementing the state model by running said plurality of runtime codes while referring to said plurality of state tables [col. 2, lines 40-48, "One traditional approach...finite state machine."].

19. As for claim 11, Russell discloses a state processor for generating a state table and a runtime code for use in implementing of one or more pre-designed state models, said device comprising:

a state model information provider extracting state model information in response to the one or more state models [col. 2, lines 40-48, "One traditional approach...finite state machine."];

a state information separator generating a state code and the state table in response to the one or more state models [col. 2, lines 40-48, "One traditional approach...finite state machine."]; and

a compiler compiling said state code and generating the runtime code [col. 2, lines 40-48, "One traditional approach...finite state machine."].

20. As for claim 12, Russell discloses a device as in claim 11 further comprising an event organizer generating an event symbols header in response to a header file [col. 5, lines 37-59, "The storage unit...entry table 510."]; and

said compiler compiling said state code using said event symbols header [col. 5, lines 37-59, "The storage unit...entry table 510."].

21. As for claim 13, Russell discloses a device as in claim 12 wherein said event organizer generates an event symbols header comprising a centralized list of all events for adding or renaming events [col. 5, lines 37-59, "The storage unit...entry table 510."].

Art Unit: 2121

22. As for claim 14, Russell discloses a device as in claim 12 wherein said event symbols header comprises global and shared event symbol definitions [col. 5, lines 37-59, "The storage unit...entry table 510."].
23. As for claim 15, Russell discloses a device as in claim 12 wherein said header file comprises global and shared event symbol definitions [col. 5, lines 37-59, "The storage unit...entry table 510."].
24. As for claim 20, Russell discloses a device as in claim 11, wherein said state processor generates a plurality of state tables and a plurality of state codes in response to one or more state models [col. 5, lines 6-25, "Referring to Fig. 2...finite state machines."].

Claim Rejections - 35 USC § 103

25. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

26. **Claim 7** is rejected under 35 U.S.C. 103(a) as being unpatentable over Russell (US 6,212,625 B1) (hereinafter Russell).
27. As for claim 7, Russell does not explicitly teach annotating the state model with actions and conditions. It is both known and expected in the art of computer programming to annotate code for the purpose of providing notes or visual queues for the user. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Russell

Art Unit: 2121

by annotating the state model with actions and conditions for the purpose of providing notes or visual queues for the user.

28. **Claims 9-10, 16-19** are rejected under 35 U.S.C. 103(a) as being unpatentable over Russell in view of Bernaden III et al (US 6,477,439 B1) (hereinafter Bernaden).

29. As for claim 9, Russell does not specifically disclose implementing a cooperating set of run-time controllers. Bernaden teaches a method similar to claim 8 wherein implementing a pre-designed plurality of state models comprises implementing a cooperating set of run-time controllers [col. 3, line 23 - col. 4, line 19, "In OOP, the state....data structure 19."]. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Russell by implementing a cooperating set of run-time controllers, because this would allow for the execution of an object-oriented execution routine in the controller, as taught by Bernaden [col. 1, lines 39-46, "The present invention...in the controller."].

30. As for claim 10, Russell discloses a method similar to claim 8 further comprising:

generating an events symbols header in response to a header file [col. 5, lines 37-59, "The storage unit...entry table 510."]; and

generating a plurality of state codes in response to said processed extracted state information and said events symbols header [col. 5, lines 37-59, "The storage unit...entry table 510."].

31. As for claims 16-18, although obvious to one of ordinary skill in the art, Russell does not specifically teach the device of claim 11 further comprising a runtime library. Bernaden teaches a device similar to claim 11 further comprising a runtime library, wherein the runtime library comprises a generic state machine component for implementing event

handling and a time and memory efficient interpreter for processing and handling events [col. 3, line 23 - col. 4, line 19, "In OOP, the...data structure 19."]. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Russell by using a runtime library, because this would allow for the execution of an object-oriented execution routine in the controller, as taught by Bernaden [col. 1, lines 39-46, "The present invention...in the controller."].

32. As for claim 19, neither Russell nor Bernaden explicitly teach annotating the one or more state models. It is both known and expected in the art of computer programming to annotate code for the purpose of providing notes or visual queues for the user. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Russell by annotating the state model for the purpose of providing notes or visual queues for the user.

Conclusion

33. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 5,386,464, note state table is referred to during code execution; US 5,675,756, note runtime library; US 5,920,718, note object-oriented state machine; US 6,104,963, note use of scheduler; US 6,374,144 B1, note hierarchical state machine; US 6,546,297 B1, note state machine library, col. 7; <http://wombat.doc.ic.ac.uk/foldoc/foldoc.cgi?query=library>; <http://wombat.doc.ic.ac.uk/foldoc/foldoc.cgi?query=annotate>.
34. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aaron Perez-Daple whose telephone number is 703-305-4897. The examiner can normally be reached on 9am - 6pm.

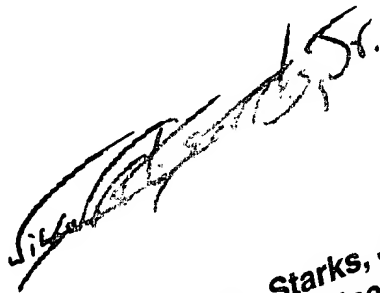
Art Unit: 2121

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anil Khatri can be reached on 703-305-0282. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AP 2/6/04

Aaron Perez-Daple



Wilbert L. Starks, Jr.
Primary Examiner
Art Unit - 2121